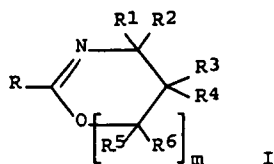


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TITLE: Method for producing cyclic imide ester by
cyclocondensation of amino alc. with nitrile
INVENTOR(S): Kimura, Yoshio; Yasuda, Hiroshi
PATENT ASSIGNEE(S): Showa Denko Kk, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
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FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

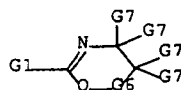
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PRIORITY APPLN. INFO.:			JP 1993-91572	19930419
OTHER SOURCE(S):			CASREACT 122:265389	

GI



AB Cyclic imide esters [I; R = C1-15 alkyl (optionally substituted by C1-5 alkyl, C1-5 alkoxy, N-alkylpyrrolyl, thienyl, furyl, Ph, or substituted Ph), C7-10 bicycloalkyl (optionally substituted by C1-5 alkyl), N-alkylpyrrolyl, thienyl, furyl, Ph (optionally substituted by halo, C1-5 alkyl, or C1-5 alkoxy), halo, C1-5 alkyl, C1-5 alkoxy; m = 0,1; R1 - R6 = H, Me, Et, Pr] are prepared by cyclocondensation of nitrile RCN (R = same as above) with amino alcs. H₂NCR₁R₂CR₃R₄(CR₅R₆)mOH (R₁ - R₆, m = same as above) in the presence of rhodium complex catalyst Rh[Ph₂P(CH₂)_nPPh₂]₂Y (n = 3-6; X = H, halo, PF₆, ClO₄, BF₄, CF₃SO₃; Y = norbornadiene, cyclooctadiene, cyclooctatriene) or a combination of PhX(PPh₃)₃ (X = same as above) and (0.5-2)-times mol phosphine compound Ph₂P(CH₂)_lPPh₂ (l = 3,4,5). This process suppresses the formation of byproducts, economically gives in high yields products I which can be readily separated, enables the recycling of the catalysts since they are stable and do not lose the activity during distillation or the catalyst recovery process, and also easily enable to recover and recycle solvents. These cyclic imide esters I are useful as polymer modifiers, materials for adhesives, or intermediates for drugs, agrochems., and dyes. Thus, propionitrile 14.32, 2-aminoethanol 5.3, and RhBF₄[Ph₂P(CH₂)₄PPh₂](1,5-cyclooctadiene) 0.25 g was refluxed with stirring under Ar in a Schlenk tube for 5 h to give 92.5% 2-ethyl-2-oxazoline (b.p. 56-58°/100 mm Hg) according gas chromatog.

MSTR 4



G1 = alkyl <containing 1-15 C> (opt. substd. by G2)
G2 = Ph (opt. substd. by 1 or more G4)
G4 = halo
G6 = bond

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